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STATISTICAL BULLETIN

METROPOLITAN LIFE INSURANCE COMPANY

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Longevity Almost Doubled in Six Decades

IN THE first decade of the Metropolitan Life Insurance Company's experience in Industrial insurance, the average length of life of its policyholders must have been about 34 years. This estimate is based on some early records in the Company's archives, which show an expectation of life of 40 years at age 1 for the period 1879 to 1889. From other life tables relating to about this time, we know that, on account of the high infant mortality, the expectation of life at birth (average length of life) must have been about six years less—that is, 34 years. Since then the figure has been almost doubled, for the average length of life just computed on a basis of mortality among the Company's Industrial policyholders in 1941 is 63.42. This once more establishes an all-time high. America's wage-earners and their families have thus entered the war period in the best state of health and longevity they have yet achieved.

The systematic series of life tables computed in the Statistical Bureau dates from the years 1911 and 1912. At that time the expectation of life at birth was 46.63 years, so that a gain of 16¾ years has been made during the three decades that have since elapsed. The gain in the last decade was 5½ years, and in the last year alone one-half year. Further details will be found in Table I on page 2.

The gains thus recorded, amounting to almost a doubling of the average length of life within the history of Industrial insurance in this country, is a rich reward for the constant effort of official and private medical and public health organizations towards a higher standard of life for the American people. In this progress, the Metropolitan Life Insurance Company has fortunately been able to play a significant part, both as insurance carrier and as health agency.

The chart on page 3 indicates in further detail the improvement in expectation of life not only at birth but at successive ages of life up to age 70. Three curves are shown, relating respectively to the periods 1879 to 1889, 1911 to 1912, and 1941. Naturally, the curves draw

together towards the higher ages, but in each case the curve for 1941 is well above that for 1879 to 1889, the curve for 1911 to 1912 falling between the two. One aspect of the improvement, as the chart shows, is that the average Industrial policyholder of age 35 today still has as many years of life before him as the child in the wage-earning family of

TABLE I

EXPECTATION OF LIFE AT BIRTH. WEEKLY PREMIUM-PAYING BUSINESS, INDUSTRIAL DEPARTMENT 1879-1889 TO 1941—METROPOLITAN LIFE INSURANCE COMPANY

CALENDAR YEAR	EXPECTATION IN YEARS	CALENDAR YEAR	EXPECTATION IN YEARS	CALENDAR YEAR	EXPECTATION IN YEARS
1941	63.42	1933	59.19	1925	55.51
1940	62.93	1932	58.80	1924	55.62
1939	62.50	1931	57.90	1923	54.55
1938	61.94	1930	57.36	1922	55.04
1937	60.71	1929	55.78	1921	55.08
1936	60.31	1928	55.88	1919–1920	51.14
1935	60.25	1927	56.42	1911–1912	46.63
1934	59.45	1926	55.02	1879–1889	34.

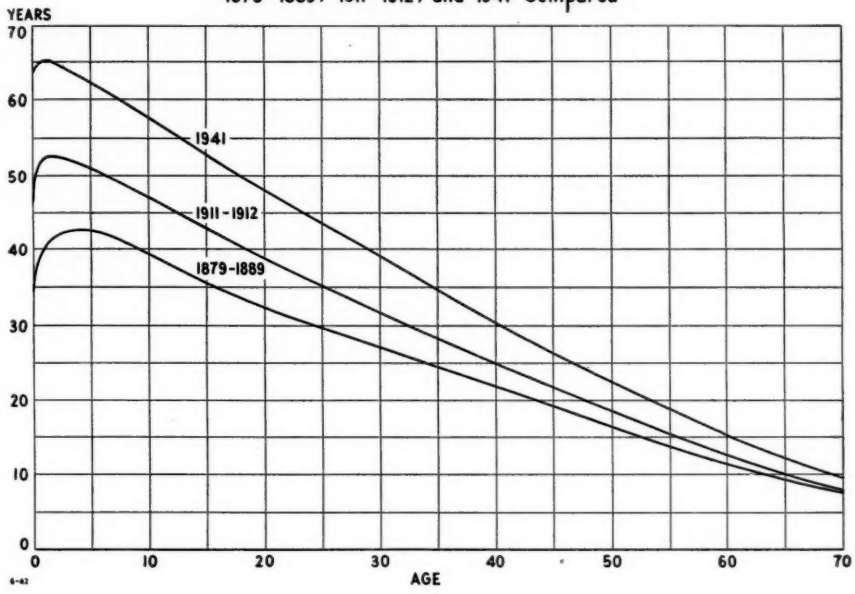
Gain, 1941 since 1911-1912, 16.79 years; since 1879-1889, 29 years

TABLE II

EXPECTATION OF LIFE AND MORTALITY RATE PER 1,000, AT SPECIFIED AGES, BY COLOR AND SEX. WEEKLY PREMIUM-PAYING BUSINESS, INDUSTRIAL DEPARTMENT, 1941 —METROPOLITAN LIFE INSURANCE COMPANY

AGE	EXPECTATION OF LIFE					MORTALITY RATE PER 1,000				
	Total Persons	White		Colored		Total Persons	White		Colored	
		Males	Females	Males	Females		Males	Females	Males	Females
5	62.30	60.33	64.99	55.63	57.71	1.08	1.25	.96	2.15	1.76
10	57.56	55.64	60.23	51.05	53.05	.67	.82	.55	1.16	.77
15	52.78	50.88	55.40	46.42	48.36	1.11	1.19	.74	2.42	2.44
20	48.13	46.23	50.64	42.10	44.12	1.75	1.82	1.17	3.94	4.30
25	43.58	41.67	45.96	37.98	40.09	2.24	2.21	1.61	4.98	4.83
30	39.08	37.14	41.35	33.96	36.03	2.81	2.76	1.99	6.37	5.15
35	34.67	32.70	36.78	30.08	31.97	3.85	4.13	2.65	7.79	6.37
40	30.38	28.45	32.30	26.27	28.06	5.27	6.01	3.63	9.63	8.79
45	26.23	24.36	27.93	22.58	24.38	7.31	8.64	5.25	12.58	12.15
50	22.27	20.52	23.74	19.11	20.92	10.81	13.56	7.96	18.69	15.65
55	18.57	17.05	19.76	16.03	17.61	15.91	20.35	12.11	25.91	21.02
60	15.14	13.87	16.07	13.19	14.57	23.36	28.81	19.05	35.65	29.40
65	12.03	10.97	12.75	10.66	11.87	35.41	41.73	30.78	49.73	43.82
70	9.33	8.44	9.89	8.49	9.66	55.32	66.36	49.43	73.05	61.97
75	7.09	6.49	7.51	6.89	7.79	84.01	100.65	76.07	104.36	82.59

EXPECTATION OF LIFE
Metropolitan Life Insurance Company, Industrial Department
1879-1889; 1911-1912; and 1941 Compared



1879 to 1889 had at the time of its birth.

Throughout the whole period, the expectation of life of white persons has always exceeded that of the colored by a considerable margin. The current figures (1941), at age 5, are 60.33 years for white males and 55.63 years for the colored (see Table II on page 2). For females, the corresponding figures are 64.99 years for the white and 57.71 years for the colored. One way of expressing the divergence between the expectation of colored lives and that of white, is to say that in this Industrial experience today the level of the colored is about that which the white persons had attained two decades ago.

The differences in expectation of life are an expression of the corresponding differences in mortality. Thus, at ages 15 to 33 years, the mortality rates for colored males are more than twice those for white males. In the case of females, the ratio of colored to white mortality is more than two to one at each age from 12 to 49 years; in fact, at ages 15 to 24, the ratio is more than three to one.

Children in wage-earning families experienced exceptionally low mortality rates in 1941. For example, mortality rates of less than one per thousand were experienced by white males at ages from 8 to 13, by white females at ages from 5 to 18, and by colored females at ages 8 to 11.

The lowest mortality rate experienced by colored males was at age 9—namely, 1.13 per thousand.

In the case of white persons, mortality among men is greater than among women at each age of life, but among the colored the rate for females is higher than that for males at ages from 15 to 24 years. This situation arises mainly from the much greater incidence of disorders of pregnancy and childbirth among colored women as compared with the white.

Today, the Industrial policyholders and their families enjoy a longevity only a trifle below that of the general population. Whereas in 1911, the year with which our continuous series of life tables began, the insured lives had a disadvantage of 6.41 years in expectation of life, as compared with the general population; in 1940, the latest year for which comparable data are available, this difference had been reduced to materially less than one year. Current indications are that 1942 will further reduce the dwindling gap between the two, and that the insured wage-earners of our country will be practically on a level with the general population in average length of life.

The Chances of Marriage

THE marriage rate in the United States has for many years past been among the highest observed in any of the leading nations of the world. At the same time, the proportion of married persons at the younger ages in the population has been much higher here than in most of the European countries. For instance, in the United States in the age group 20 to 24, about one quarter of the men and more than half the women are already married. As against this, in England and Wales, only about one seventh of the men and one quarter of the women in that age group are married; in Italy, about one tenth of the men and one third of the women in that age group are married. In the Irish Free State, proportions are even lower—namely, about one twentieth of the men and one seventh of the women. Similar data could be cited for other European countries. These contrasting figures indicate not only greater frequency of marriage in the United States, but also a marked tendency for earlier marriages. They reflect the very favorable economic conditions and the high standards of life in America, as well as the general optimistic spirit of the people favorable to family life.

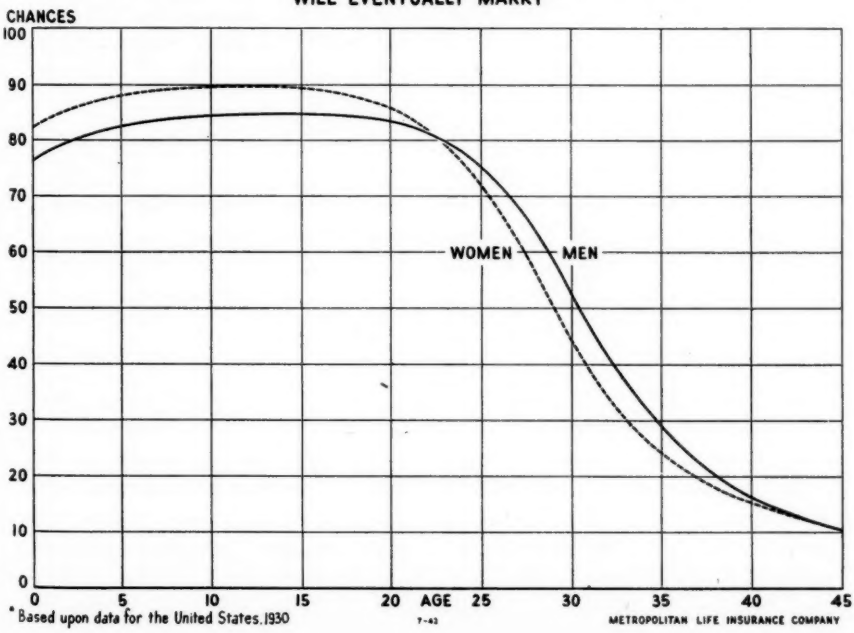
Under these conditions, the probabilities of eventually marrying are very high for American youth. For a young girl at the age of 18, the chances that she will eventually marry are 87 in 100, and for a young man of 21, the chances are 83 in 100. This means that under prevailing customs, only 13 percent of our girls attaining marriageable age will remain spinsters, and 17

percent of the men reaching majority, will remain bachelors.

Under age 22, the chances of eventual marriage are greater for a girl than for a boy, but beyond this age the situation is reversed. This, of course, is related to the fact that on an average men marry several years later than women. Thus, in New York State, the average age at first marriage for women is about 23 years, while for men it is near 26 years. Furthermore, considering individual couples, the average age of the groom is several years in excess of that of the bride, and the disparity increases with the age of the groom. From these circumstances it results that at ages over 22 the chances of eventual marriage are greater for men than for women of a given age. On the other hand, because of the relatively greater frequency of marriages at very young ages among women as compared with men, the chances of eventual marriage are greater for women than for men at ages under 22, as already noted.

The chances of eventual marriage increase from birth to a maximum about age 15. This is due to the fact that some deaths are bound to occur before a marriageable age is reached. Thus at birth the chances of eventually marrying are 82 out of 100 for a girl as against 90 out of 100 at age 15. After age 15, the chances diminish, and not until age 22 have the chances of eventual marriage

CHANCES PER 100 THAT A WHITE SINGLE PERSON OF SPECIFIED AGE WILL EVENTUALLY MARRY*



*Based upon data for the United States, 1930

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METROPOLITAN LIFE INSURANCE COMPANY

dropped back to their original value at birth. For males this condition is not reached until age 25, when the chances of eventual marriage are 76 out of 100.

How rapidly the chances of eventual marriage decrease with age is illustrated by a few figures read from the graph. The chances are about two in three for a single person of age 27. They are about one in two at age 30, and they are about one in four for a person who has remained unmarried to the age of 36. For the confirmed bachelor or spinster of age 45, the remaining chances of eventual marriage are only about one in ten—that is, the odds are nine to one against eventual marriage.

The conditions portrayed here are those that may be expected in a country at peace. War brings new conditions that may seriously alter the picture. In the past two years we have seen the marriage rate suddenly and materially increased through circumstances related to the outbreak of the war. A prolonged war, on the other hand, by the withdrawal of a large proportion of marriageable men from civilian life, will tend to decrease the chances for eventual marriage, especially for women. This situation is further aggravated in the event of heavy war casualties, with the resulting disturbance in the ratio of men to women of marriageable age. This is what was actually observed, in very serious measure, in some of the warring countries after the termination of the last World War.

A Profitable By-Product of the War

THOUSANDS of persons, who never before had given thought to such things, are learning, or have recently learned, the principles and practice of first aid. It has taken a war to bring about this result which peacetime efforts, by the combined forces of safety campaigns, could not have hoped to accomplish.

One need not be an advocate of war to discern among its many terrible and tragic evils some good things arising as a by-product. An optimistic outlook is justified for a keener interest in home safety when the war is over. In industry and on our public highways, Government authorities have long been active in enforcing safety measures, but in the home there has not been, and presumably cannot be, any such influence for enforcement. In the home, education must be our chief approach, yet the housekeeper has been difficult to reach with the safety message. Our defense activities, aside from their immediate object, may bring the secondary benefit of providing a far-reaching stimulus in the movement for safety in the home.

Many of those attending the first-aid classes have been housewives and young women who presently will be establishing homes of their own. Meanwhile the specialized training given to air-raid wardens has produced a body of men trained in detecting avoidable hazards in the home. It has been one of the func-

tions of these wardens, which they have not been slow to develop, to point out to their neighbors the necessity for clearing stairs, halls, and passageways of objects which persons would be liable to strike against or trip over in the darkness of a blackout. They have also drawn attention to the all too common disorder in cellars and attics, and the desirability to clear these places of refuse—and especially of inflammable material.

The lessons so learned will be remembered after their immediate object as a war measure has been fulfilled. The period of stress through which we are passing may well be designed to develop among Americans a more widespread and more intelligent interest in safety in the home, and after the war we may be living more safely than before hostilities started. The large number of persons instructed in first aid and as air-raid wardens should become an important force in bringing about this improvement. This would only bear out the experience of many industrial employers, who have long been convinced that employees trained in first aid have a better understanding of the seriousness of injuries and develop safer habits than other employees.

Many of the students who come to the first-aid classes have no conception of the magnitude of the problem presented by accidental injuries. It comes to them as a shock to hear that some 10,000,000 disabling injuries are suffered in accidents of all kinds in the United States each year, and they are even more amazed when informed that about one half of the total of disabling injuries are sustained in accidents in or about the home.

The lessons given are thoroughly practical in conception. In many cases the people are asked by the instructor, as a matter of practice, to make an inspection of their own home and to list the hazards discovered. The results of these inspections are made a subject for classroom discussion, with special regard to the measures taken or to be taken to eliminate the hazards reported.

The family physician and visiting nurse may figure more prominently in home-accident prevention than in the past. In preparing themselves for discussions of the various kinds of accidents with their first-aid classes, numerous doctors are themselves, for the first time, becoming acquainted with the real seriousness of the home-accident problem. Acting as instructors also may further stimulate interest in home safety among visiting nurses—one of our present best means of bringing the home-safety message to the people.

If we are wise we shall look upon these developments as an opportunity. The air-raid wardens of today may well form a nucleus for a strong neighborhood safety organization after the war. Many whose first experience in the affairs of their town was gained in these critical days are likely to continue in these interests, particularly in so far as they relate to the safety of their

homes. There is also the fact that many more housewives than ordinarily will have had the experience of working in industrial plants, where they come under the influence of intensive safety planning. In its instructions to employees, industry is constantly urging safe working habits. We may naturally expect that this training also will tend to develop safer habits in the homes among many of the women who have passed through the experience of industrial work.

Army Health Continues Excellent

THE treacherous attack on Pearl Harbor found our military medical organization fully prepared. A notable chapter in the history of American military medicine is the extraordinary record—in speed, in up-to-the-minute therapeutic methods, and in effectiveness—of the treatment of the men injured in that attack. Other brilliant chapters are being written today in the resourceful handling of the medical problems created by our entrance into the war.

The health of the men in service continues at the high level described in our September 1941 issue. This is revealed by current statistics, down to April of this year, for the Army personnel located in the United States. Except for certain special situations, the record for the troops here at home is probably a good index of conditions in the Army as a whole. The statistics given in this article are largely based on admissions to "sick report," separately for disease and for injuries. In judging the current record, as compared with the recent past and with the earlier record of our small peacetime Army, one must keep in mind that the continuing stream of new men into the forces brings with it a very important health problem in that some men, more particularly those from the rural areas, are for the first time exposed to certain common germ and virus diseases, such as the principal infectious childhood diseases. The importance of this in the total disease picture is more or less related to the proportion which newly inducted men bear to the total in service. Another factor which tends, temporarily at least, to raise the incidence of sickness is that many of the men are engaging in activities far more strenuous than in their civilian life.

Fortunately, the past winter has been free from any serious epidemic, such as the influenza outbreak of the winter of 1940-1941. Primarily as a consequence of this, the admission rate for illness this past winter was far lower than in the preceding year. For the period from December 1941 through April 1942 the rate was about 720 per 1,000,* or just about half the figure of nearly 1,450 for the corresponding period of 1940-1941. Another factor in this general improvement in the sickness rates is

*All rates used in this article are on an annual basis per 1,000. Monthly admission rates for 1942 have been estimated from the Weekly Statistical Reports issued by the Surgeon General, War Department.

that the proportion of new men to the total in service, while still high, has been progressively smaller. Recent admission rates for disease compare not unfavorably with the five-year averages in our small peacetime Army during 1936-1940. While the current rates are generally somewhat higher, this must be judged in the light of the circumstances already noted which tend to raise the rates in a force consisting so largely of unseasoned troops. There must also be considered the definite policy of encouraging soldiers to report illnesses, however minor, in order to prevent complications and in order to control the spread of communicable disease.

The recent disease record of the Army is particularly favorable as regards respiratory diseases, and this accounts for a great part of the decline in total admissions for disease. Pneumonia, however, is an exception, but this disease accounts for only a small part of the total cases of respiratory sickness. Moreover, the mortality from it is negligible, thanks largely to the use of the new sulfa drugs.

As already stated, the rapid growth of the Army creates definite problems as regards communicable disease. There are numerous cases of measles, scarlet fever, and mumps. Generally, the most frequent of these diseases is measles. For this disease and for scarlet fever, current rates are lower than a year ago, but that for mumps is slightly higher. The rates for all are appreciably higher than normal for the Army. However, their incidence and mortality are nothing like what they were in the first World War, when these diseases, particularly measles, were responsible for a high proportion of the illnesses and deaths in the Army. Cerebrospinal meningitis also continues to be relatively infrequent in our new Army, and, again thanks to the sulfa drugs, deaths from it are rare. In contrast, one third of the much larger number of cases in 1917-1918 died.

Probably the least satisfactory item in the health record of our Army are the venereal diseases. Current admission rates continue to be somewhat higher than in previous years. Some improvement has occurred quite recently, and it is to be hoped that this trend will continue. The civil authorities have a great responsibility in the control of venereal diseases. Their efforts have not been wholly without results, for the incidence of these diseases is much lower than in the first World War. But this is not enough. Unless the civil authorities meet their responsibility, the War Department will be compelled to invoke the powers conferred upon it under the May Act.

The fullest measure of improvement in the health of the Army is found in the extraordinarily low death rates from disease. These facts are available only up to the end of 1941. For that year death rates from disease were consistently under one per 1,000 (annual basis) in every month. In November the rate fell to the extraordinarily low figure of 0.43 per 1,000. These rates

are well below those for men of the same ages in the general population. For the year 1941 as a whole the death rate from disease in the Army, well under one per 1,000, was little more than one half that for 1940, which itself established a record, and about 60 percent less than the five-year average from 1936 to 1940.

By the very nature of Army life, the risk of injury from accidents is high. Admission rates to sick report for this cause have been comparatively favorable in recent months, probably because in the early part of their training period most of the men in our rapidly expanding Army have relatively little contact with mechanized equipment or heavy weapons. The death rate, also, from accidental injuries has tended to fall below the average of recent years. While, however, such injuries usually account for only one sixth of the total admissions to sick report, they are responsible for a majority of the deaths, even in peacetime. Last year, deaths from injuries were twice as many as from disease. The Army has been keenly aware of its accident problems, and long ago developed a thoroughgoing program to control this major source of disability and death.

Current data on the types and causes of injury are not available. An increasing proportion of the fatal injuries is obviously due to air transport accidents because of the rapid growth and large-scale activities of this branch of our armed services. In 1940, the last year for which the statistics have been published, air transport accidents accounted for more than 10 percent of all deaths in the Army. Inasmuch as (except in training) officers are at the controls during flights, and make up a high proportion of the active flying personnel, it is not surprising that, among officers, airplane accidents was the leading cause of death. However, the mortality among Air Corps officers in 1940, with allowance for their increased numbers, was approximately at the average level of the five years preceding.

The highly favorable records of mortality from disease and injury last year both contributed to the all-time low death rate from all causes recorded in 1941 for troops stationed in the United States. This rate was approximately two per 1,000, or about 25 percent better than in 1940, the previous minimum, and at least 40 percent below the five-year average of 1936-1940.

We have as yet only the merest glimpses of health conditions among our troops abroad. But we can be certain that these men are getting the best care that can be given them under the conditions, whether of active fighting or of preparation for it, that prevail in the areas where our soldiers are located. Hundreds of well-trained physicians are joining the armed forces every week now. As a result of the advances in medical knowledge and in medical education, these men are much better equipped for their task than were their predecessors in 1917-1918. They can be depended upon to do well their part of the war job.

Comparative Data on the Causes of Death Among Industrial Policyholders

The following table shows the mortality among Industrial policyholders for April 1942 and April 1941, together with the death rates for the first four months of 1942, 1941, and 1940.

DEATH RATES* PER 100,000 POLICYHOLDERS FROM SELECTED CAUSES. WEEKLY PREMIUM-PAYING INDUSTRIAL BUSINESS — METROPOLITAN LIFE INSURANCE COMPANY

CAUSES OF DEATH	ANNUAL RATE PER 100,000 POLICYHOLDERS*				
	April 1942	April 1941	Year to Date: End of April		
			1942	1941	1940
ALL CAUSES—TOTAL	772.3	789.1	805.5	830.7	837.9
Typhoid fever	0.5	0.4	0.2	0.5	0.5
Measles	.7	2.3	.7	1.1	.4
Scarlet fever	.4	.9	.6	.7	.9
Whooping Cough	1.1	1.0	1.0	1.4	1.4
Diphtheria	.4	.5	.6	.7	1.2
Influenza	5.4	8.2	7.1	17.6	14.8
Pneumonia (all forms)	39.8	40.9	41.5	48.6	54.5
Tuberculosis (all forms)	41.6	43.5	43.4	44.9	46.6
Tuberculosis of respiratory system	37.8	40.0	39.3	41.0	42.6
Syphilis	11.9	12.4	11.1	11.8	12.4
Cancer (all forms)	100.7	103.5	105.8	105.9	103.0
Diabetes mellitus	29.4	29.0	31.1	32.3	33.0
Cerebral hemorrhage	62.8	64.0	65.9	67.0	66.0
Diseases of the coronary arteries and angina pectoris	58.7	54.4	64.1	59.3	55.5
Other chronic heart diseases†	162.5	161.7	175.6	178.8	178.7
Diarrhea and enteritis	2.9	2.6	3.5	3.1	3.6
Appendicitis	6.0	8.2	5.6	7.8	9.0
Chronic nephritis	50.1	54.8	55.9	58.4	62.7
Puerperal state—total	4.3	3.8	4.7	4.0	4.8
Suicides	6.1	8.1	7.3	8.0	7.9
Homicides	3.3	3.0	3.9	3.3	3.1
Accidents—total	46.0	45.3	48.9	46.4	42.8
Home accidents	11.3	11.9	13.3	12.6	14.0
Motor vehicle accidents	15.3	17.5	19.4	19.2	15.2
War deaths	4.9	.3	5.2	.1	.1
All other causes of death	132.7	140.2	121.9	129.1	135.3

*The rates for 1941 and 1942 are subject to slight correction, since they are based on provisional estimates of lives exposed to risk.

†International List (1940) titles 92, 93 (c), (d), (e), and 95.

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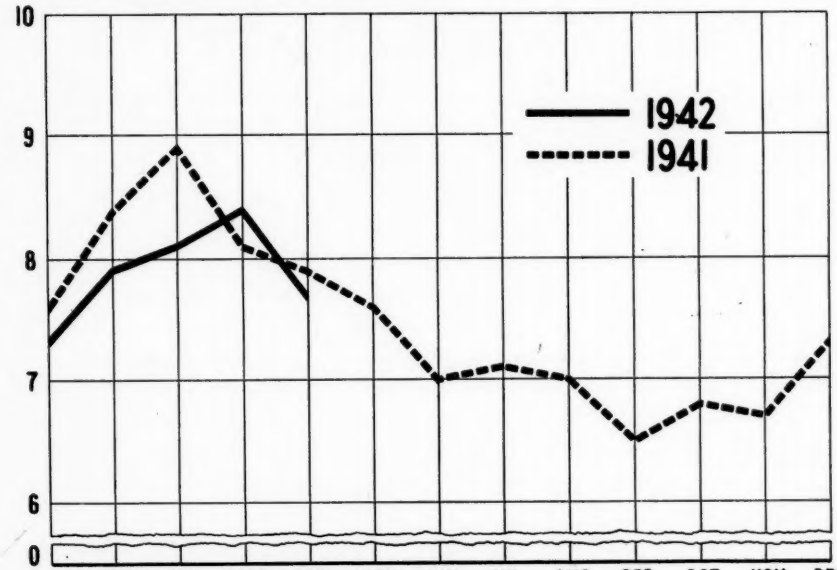
MORTALITY FROM ALL CAUSES

METROPOLITAN LIFE INSURANCE COMPANY
INDUSTRIAL DEPARTMENT, WEEKLY PREMIUM-PAYING BUSINESS

DEATH RATES PER 1,000 · ANNUAL BASIS (Provisional)



(DEC.)	JAN.	FEB.	MAR.	APR.	MAY	JUN.	JUL.	AUG.	SEP.	OCT.	NOV.	DEC.
1941	8.4	8.9	8.1	7.9	7.6	7.0	7.1	7.0	6.5	6.8	6.7	7.3
1942	7.9	8.1	8.4	7.7								

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